

**REMARKS**

After entry of this Amendment, claims 8 - 27 are pending in the application. Claims 1 - 7 have been cancelled without prejudice. Claims 8, 12, and 13 have been amended to more particularly point out and distinctly claim the invention. Claims 15 - 27 have been added. Reconsideration of the application as amended is requested.

A copy of the Second Substitute Specification is enclosed. Please enter this enclosed Second Substitute Specification in place of the original Substitute Specification. When reviewing this case for responding to the Office Action, it was noticed that the original Substitute Specification previously submitted when filing this case on June 15, 2001 did not include all of the corrections shown in the Redlined Specification also filed on June 15, 2001. The attached Second Substitute Specification now includes the corrections as shown in the Redlined Specification submitted on June 15, 2001. No new matter has been added.

Claim 12 stands objected to in view of the informality in line 2 wherein the term "places" should be "placed." Claim 12 has been amended to correct the informality as suggested by the Examiner.

Claims 8 - 12 and 14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Patel, '339, in view of Broszniowski, '943. The Examiner asserts that it would have been obvious to one of ordinary skill in the art to employ the monitoring device of Patel on the wiper blade as suggested by Broszniowski to determine when the effective life of the blade or rubber wiping compound is expired. The Examiner states that it appears that the monitoring device of Patel could be employed to monitor the shelf life of the blade rubber or actual operational life of blade rubber. Broszniowski does not constitute prior art under 35 U.S.C. §102 or, in the alternative under §103(c). The present invention has the same inventor as Broszniowski '943. Therefore, Broszniowski '943 does not qualify as prior art under 35 U.S.C. §102(a). The present application has a foreign priority date of December 15, 1998, which is less than one year after the printed patent of Broszniowski '943

published on April 3, 1998. Therefore, Broszniowski '943 does not qualify as prior art under 35 U.S.C. §102(b) or §102(d).

In addition, the present invention has the same ownership as Broszniowski '943 and does qualify as prior art under 35 U.S.C. §102(e).

**STATEMENT OF COMMON OWNERSHIP UNDER 35 U.S.C. §103(c)**

At the time the Broszniowski '943 invention was made, it was subject to an assignment to Valeo Systems D'Essuyage, to whom the patent has since been assigned. Likewise, at the time the present invention was made, it was also subject to an assignment to Valeo Systems D'Essuyage. All rights to the present invention have been assigned to Valeo Systems D'Essuyage. Under §103(c), a reference that qualifies as prior art only under one or more sections (e) (f) and (g) of 35 U.S.C. §102 shall not preclude patentability under §103 where the subject matter of the claimed invention was, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

It is respectfully submitted that the Examiner's reliance on the non-analogous art of Patel '339 is inappropriate. In particular, one skilled in the art of tracking the useful life of windshield wiper blades would not search or have knowledge of devices for monitoring shelf life of perishable products. The determination of when arts are analogous depends on the necessary essential features or utility of the subject matter covered by the claims and not what it is called. (See Manual of Patent Examining Procedure §904.01(c)). When the proposed combination of references involves material modifications of the basic form of one article in view of another, the nature of the articles involved is a definite factor in determining whether the proposed change involves invention. See In re Glavas, 109 USPQ 50 (CCPA 1956) and MPEP §1506. The function of the present invention, mainly a wear indicator for indicating the useful life of a wiper blade, is not the same as a device for monitoring shelf life of perishable products as disclosed in the Patel patent. For resolution of obviousness under 35 U.S.C. §103, the law presumes full

knowledge by the hypothetical worker having ordinary skill in the art of all the prior art in the inventors' field of endeavor. With respect to the present application, the appropriate field of endeavor is the wiper blade art. With regard to prior art outside the inventors' field of endeavor, knowledge is presumed only as to those arts reasonably pertinent to the particular problem with which the inventor was involved. See *In re Clay*, 966 F.2d 656, 23 USPQ2d 1058 (Fed. Cir. 1992), *In re Wood*, 599 F.2d 1032, 202 USPQ 171 (CCPA 1979), *In re Antle*, 444 F.2d 1168, 170 USPQ 285 (CCPA 1971). In the present application, the inventor is concerned with useful life of a wiper blade. Following *Clay* and *Wood*, the determination that a reference is from a non-analogous art is two fold. First, it must be decided if the reference is from within the inventor's field of endeavor. If it is not, then it must be determined whether the reference is reasonably pertinent to the particular problem involved. The Patel reference discloses a device for monitoring shelf life of perishable products. The Patel reference does not relate to the useful life of a wiper blade on the motor vehicle, and therefore is outside of the inventor's field of endeavor. The Patel reference is not reasonably pertinent to the particular problem involved in the present application, since the present application is concerned with monitoring useful life of a wiper blade on a motor vehicle, while the Patel reference is concerned with shelf life of an item, and in particularly of perishable items. It is respectfully submitted that the Patel reference is non-analogous art, and therefore cannot be properly combined with the Broszniowski reference as suggested by the Examiner in rejecting claims 8 - 12 or 14. Reconsideration and withdrawal of the Examiner's rejection is respectfully requested.

In addition, it is respectfully submitted that, if this reference is considered to be analogous art, the combination of references, taken singularly, or in any permissible combination does not anticipate, teach or suggest the present invention as set forth in the claims. It is submitted that the present invention is not anticipated, taught, or rendered obvious by the combination of Patel '339 in view of Broszniowski '943. In particular, the monitoring device of Patel requires two separate pieces that must be bonded together to activate the device. In Patel, the

activator tape continuously reacts with the indicator tape and produces a visually observable color change to indicate shelf life of the perishable product. The patent does not teach or suggest removing a protective film during installation of a product (i.e., after a shelf life of undetermined length) to activate the monitoring device to track useful life of the product regardless of the previous shelf time during which the product was stored. It would not be obvious to use the monitoring device of Patel on a windshield wiper blade to monitor the operational wear of the windshield wiper since Patel teaches tracking shelf life. Claim 8 as amended requires the wear indicator to include a substance based at least on an azo compound covered with a protective mask, wherein the wear indicator is activated with at least partial removal of the protective mask from the substance. Patel does not teach or suggest the same activation means of the wear indicator as in the present invention. Claim 9 requires an inert layer which is made of a different color than the reactive, degradable layer. As the definition of the word "inert" describes, the inert layer does not react with the reactive, degradable layer. In Patel, the two layers react with each other to produce a visually observable color change. Patel does not show or disclose the use of an inert layer. Claim 9 further requires that the inert layer has a reference color different from the reactive, degradable layer. The purpose of the different color inert layer is so that as the reactive, degradable layer wears away, the visible different reference color of the inert layer indicates the level of wear on the wiper blade. Patel states that the activator film can be the same as the indicator film since it is the color change when the two films react which is significant for determining wear in the Patel reference. Claim 10 includes the ink pigmentation of the inert layer will not change and will be in fact the actual color indicator of the wear on the wiper blade.

Claim 13 was rejected under 35 U.S.C. §103(a) as being unpatentable over Patel, '339, in view of Broszniowski, '943, and further in view of Kydonieus et al., '153. The Examiner alleges that it would have been obvious to one of skill in the art to provide the sensing device of Patel with the protective mask as suggested by Kydonieus to inhibit sensor activation until desired. Again, it is respectfully

submitted that the Examiner's reliance on the non-analogous art of Kydonieus '153 is inappropriate for the same reasons as stated supra for the Patel reference. One skilled in the art of tracking the useful life of windshield wiper blades would not search or have knowledge of devices for monitoring shelf life of perishable products. Further, there would be no motivation to put a protective mask as disclosed in Kydonieus on the device disclosed in Patel since addition of the protective mask would not prevent the continuous reaction of Patel, and because the removal of the protective mask does not activate the monitoring device of Patel. Patel teaches that the indicator tape and the activator tape are joined together immediately to measure shelf life. Even if a protective mask was added to the Patel sensing device, the mask would not meet the limitations of the claims in the present invention, because once the indicator tape and activator tape are joined to measure shelf life together in Patel, the activation of the Patel device has already started, even with the addition of a protective mask covering the joined indicator and activator tapes. Combining the protective mask of Kydonieus to the sensing device of Patel would not provide the wear indicator of the present invention since the monitoring device in Patel is activated in an entirely different manner than the wear indicator of the present invention.

At best, the prior art references show components in bits and pieces of the inventive arrangement as claimed in the independent claims. The relevant art recognizes many components and concepts within its domain. Upon close investigation and scrutiny of the diverse practices in this art and its peripheral technical fields of endeavor, a fact-finder is inevitably led to the conclusion that artisans can and could produce a myriad of devices and functions of apparently endless diversity from components and concepts already individually recognized as belonging to the prior art. Such speculation must not cloud the standards for the evaluation of patentability over the prior art under 35 U.S.C. §102 and §103. Properly focused, the issues center on what would have been anticipated, or obvious to one of ordinary skill in the art at the time of the invention. Obviousness is tested by what the combined teaching of the references would have suggested to those of

ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). But it cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. See *ACS Hosp. Sys. Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). And teachings of references can be combined only if there is some suggestion or incentive to do so. See *In re Fine*, 837 F.2d 1071, 5 USPQ 2d 1596, 1599 (Fed. Cir. 1988). Approaches to obviousness determinations which focus merely on identifying and tabulating missing elements in hindsight retrospect imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, and, fall victim to the insidious effect of hindsight syndrome wherein that which only the inventor taught is used against its teacher. *W. L. Gore & Assoc. v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 USPQ 312-3 (Fed. Cir. 1983). One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. *In re Fine*, 5 USPQ 2d at 1600.

It is respectfully submitted that this Amendment traverses and overcomes all of the Examiner's objections and rejections to the application as originally filed. It is further submitted that this Amendment has antecedent basis in the application as originally filed, including the specification, claims and drawings, and that this Amendment does not add any new subject matter to the application. Reconsideration of the application as amended is requested. It is respectfully submitted that this Amendment places the application in suitable condition for allowance; notice of which is requested.

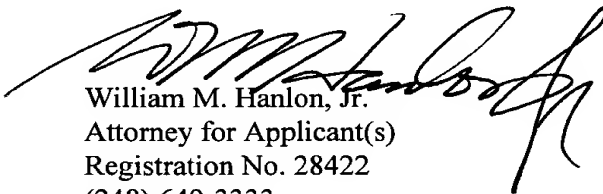
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Page 12 of 12

If the Examiner feels that prosecution of the present application can be expedited by way of an Examiner's Amendment, the Examiner is invited to contact the Applicant's attorney at the telephone number listed below.

Respectfully submitted,

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SECOND SUBSTITUTE SPECIFICATION

**MOTOR VEHICLE WIPER COMPRISING A WEAR INDICATOR**

**BACKGROUND**

- [0001] This invention concerns the wiping means of the windows of motor vehicles and, more specifically, their wear.
- [0002] A wiper blade equipped with its elastic wiper stem is a piece of the vehicle that wears out and which must be replaced regularly if one wants to guarantee a good wiping quality of the window. This proves to be even more important for the driving safety while one is using the wiper blade on the front windshield of the vehicle.
- [0003] The sources of wear are numerous and the blade is susceptible to degrading as much at the level of the wiper stem as at the joints and the articulation mount that carries it.
- [0004] For example, the wiper stem is susceptible to wear via friction but can also wear due to the deterioration of the material that it is made of.
- [0005] The agents of such deterioration are principally:
- [0006] - sun light, and more specifically, ultraviolet rays that light contains;
- [0007] - oxygen because, even if the vehicle is normally parked in a closed garage, and thus sheltered from sunlight, it cannot be sheltered from oxidation;
- [0008] - temperature, variations of temperature, and humidity;
- [0009] - ozone and all electromagnetic radiation from the environment.
- [0010] Thus, it appears to be pertinent to determine the lifespan of the wiper blade as a function of its time exposed to the air.
- [0011] In addition, frequently drivers are incapable of remembering when they last changed their wiper blades. In effect, such an operation is not generally entrusted to a vehicle repair specialist who can, for example, proceed to a systematic, regular replacement of the blades.
- [0012] It is known, for example, from application WO/01896, to use wear indicators that change color as a result of exposure to the environment. This type of



indicator presents the major inconvenience of only being sensitive to one parameter of wear, for example, ultraviolet rays.

- [0013]               The goal of this invention is to allow the driver to determine the state of reliable wear of the wiper blades of his vehicle via a wear indicator that is representative of real wear constraints, and not dependent on sun exposure, that is to say, the geographic or meteorological situation, or environment, for example, pollution or altitude.

#### SUMMARY

- [0014]               In order to achieve this goal, the invention proposes taking into account, in the composition of the wear indicator, the principal agents or parameters of the wear of the wiper stem of the wiper blades and their combined action in use conditions.
- [0015]               More precisely, the goal of the invention is a motor vehicle wiper comprising a wiper blade that is mounted on the free end of a wiper stem and pressing a wiper stem against a window to be wiped, in which the wiper is provided with an indicator comprising a substance based at least on an azo compound.
- [0016]               It has been remarked that the sensitivity of the azo compounds to chemical (oxygen, ozone) and physical conditions (radiation, temperature, humidity) as well as to mechanical constraints is comparable to that of the elastomers making up the wiping stem.
- [0017]               According to other characteristics of the invention;
- [0018]               - the wear indicator is a multi-layered label comprising an adhesive layer and a plastic support film from at least one inert layer of a reference color and a reactive degradable layer, made up of a substance of a different color based on the azo compound;
- [0019]               - the inert and reactive layers are formed via ink in which an inert chemical pigmentation, defining a reference color, and a base organic pigmentation from the azo by-products are respectively created;
- [0020]               - the inks are successively placed on the plastic support via silk-screening;

[0021] - the plastic support is in polyvinyl, polypropylene, or polyester and is covered with a protective layer fixed to the support film, in a detachable manner, via a semi-porous adhesive, this layer being pulled back during the mounting of the blade on the vehicle.

[0022] - the wear indicator is carried by the wiper blade.

#### BRIEF DESCRIPTION OF THE DRAWING

[0023] Other characteristics and advantages of the invention will become clearer in the reading of the detailed description that follows of one example of production, in reference to the attached drawings that represent, respectively:

[0024] Figure 1 is a front view of a example of an wear indicator of a wiper according to the invention; and

[0025] Figure 2 is a cross-sectional cut view according to the plane II-II of the wear indicator according to Figure 1.

#### DETAILED DESCRIPTION

[0026] One has represented on Figure 1 a motor vehicle wiper 10 that essentially comprises a wiper arm 12 at the free end 14 of which is mounted in articulation a wiper blade 16.

[0027] The wiper blade 16 comprises an articulated structure 18 which carries, via claws 20, a wiping stem 22 generally created in a supple elastomer material. The articulated structure 18 is designed to press, with its entire length, the wiping stem 22 against a window to be wiped on the car,

[0028] Conforming to the specifications of the invention, the wiper blade 16 carries an wear indicator 1 incorporating organic ink pigment based on an azo by-product, which is sensitive and degradable as a result of the chemical attacks and the mechanical constraints to which it is subjected.

[0029] The wear indicator 1 can also be attached to places other than the wiper, as long as it is easily visible while the wiper blade 16 is mounted on the vehicle.

[0030] One uses an azo by-product, such as an alkaline-terrine salt azo with a sulfuric function. In other examples of production, the compounds used can be

double-azos, tetra-double-azos, or sulfuric function azos, taken individually or in combination. Preferably, the compound used furnishes a black color in such a way as to clearly distinguish the deep vibrant color that appears while the ink pigmented via the azo by-product is decomposed.

[0031] In the production example, the wear indicator 1 is created in the form of a sticker label covered with a protective film 2 in polyethylene, resistant specifically to ultraviolet radiation and the oxygen in the air. This film 2 adheres to the rest of the label via an adhesive semi-porous layer, in order to be easily detached during installation of the blade 16.

[0032] It appears more precisely in Figure 2, which illustrates the label 1 in cross-section view, which figure makes up, in addition to the film 2, a support film 3 in polyvinyl, the lower face of which is coated with an adhesive 4 with a strong adhesion capability which allows the assurance of definitive, reliable fixation of the wear indicator 1 on the blade 16. Other plastic materials can be used for the support film, for example, from polyester or polypropylene.

[0033] On the support film 3 is placed a first layer of ink 5, colored yellow with chemically inert pigments, and covered with a second layer of ink 6 of which the color is obtained via incorporation of organic pigments of azo by-products. At the fabrication of the wear indicator 1, the ink layers 5 and 6 are successively placed via a silk-screening technique.

[0034] The label is covered by a mask in the shape of a protective film 2, fixed to the support film 3 via a semi-porous adhesive 7. The mask is pulled back during the mounting of the blade on the vehicle while removing it from the support.

[0035] Over the course of time, chemical, physical, and mechanical attacks destroy the azo pigments of the upper layer 6. Once totally decomposed, it then displays the yellow lower layer, which hasn't been subjected to any attacks and which indicates an advanced state of wear of the wiping stem.

[0036] One has the advantage to choose an intense coloration for the lower layer 5 while it is under the form of a lower degree of oxidation. Thus, noticing the changing color of the wear indicator will be clearer.

[0037]           The invention is not limited to the example of production described and represented. For example, in order to better control the kinetic of the degradation reaction, one can superimpose on the reactive layer a diffused layer that slows the contact between this layer and the chemical attacks. In addition, it is possible to mix the organic pigments to the mineral oxides, notably to some titanium oxide, in order to improve the sensitivity of the indicator.

What is Claimed Is:

1. Motor vehicle wiper comprising a wiper blade (16) mounted at the free end (14) of a wiper arm (10) in order to press a wiping stem (22) against a window to be wiped, characterized by the wiper being provided with an wear indicator (1) comprising a substance based at least on an azo compound.
2. Wiper according to claim 1, characterized by the wear indicator (1) being a multi-layer comprising an adhesive layer (4) and a plastic support film (3) of at least one inert layer (5) made of a substance of a reference color and a reactive degradable layer (6) made from a substance of a different color based on the azo compounds.
3. Wiper according to claim 2, characterized by the inert and reactive layers being formed respectively by an ink in which a chemically inert pigmentation, defining the reference color, and an organic pigment based on azo by-products are produced.
4. Wiper according to claim 3, characterized by the organic pigments being mixed with mineral oxides, notably with titanium oxide.
5. Wiper according to claim 3, characterized by the inks being successively places on the plastic support via silk screening.
6. Wiper according to one of claims 2 to 5, characterized by the plastic support being in polyvinyl, polypropylene or polyester and being covered by a protective hood (2) fixed to the support film (3) in a detachable manner, via a semi-porous adhesive (7), this mask being pulled back during the mounting of the blade (16) on the wiper.

7. Wiper according to one of the preceding claims, characterized by the wear indicator (1) being carried by the wiper blade (16).

ABSTRACT

[0038]           A motor vehicle wiper includes a wiper blade mounted on the free end of a wiper arm and pressing a wiping stem against the glass to be wiped. The wiper is provided with a wear indicator using a substance based at least on an azo compound.